

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-18. (Cancelled)

19. (Currently Amended) A method of driving a liquid crystal display (LCD) device, comprising:

detecting a reference gray scale level of a B color to begin reducing a color reproducibility in the LCD device by measuring the B color displayed on a liquid crystal panel of the LCD device while the gray scale level of the B color is increased;

storing a gray scale value of a gray scale level of the B color being present right before the reference gray scale level in a lookup table from the reference gray scale level to a maximum gray scale level, wherein the lookup table stores gray scale values of blue, red, and green colors;

receiving image information including a gray scale value corresponding to a red(R), green(G), blue(B) color by the LCD device;

determining whether the gray scale level of the B color is greater than the reference gray scale level to begin reducing the color reproducibility in the LCD device;

applying the received image information to the LCD device upon a determination that the gray scale level of the B color is not greater than the reference gray scale level;

compensating the received image information by analyzing a gray scale level of the B color in the received image information, and replacing a gray scale value of the gray scale level of the B color in the received image information with the gray scale value of a gray scale level being present right before the reference gray scale level retrieved from the lookup table in response to a determination that the gray scale level of the B color in the received image

information is greater than the reference gray scale level, wherein the compensating includes mixing gray scale values of at least two of red, green, and blue colors;

outputting a received image information including a compensated gray scale value of the gray scale level of the B color; and

applying the compensated image information to a plurality of data lines of the LCD device.

20. (Cancelled)

21-22. (Cancelled)

23. (Cancelled)

24. (New) A liquid crystal display device, comprising:

a liquid crystal display (LCD) panel, the LCD panel including a plurality of gate lines and a plurality of data lines crossing the plurality of gate lines, and a plurality of red (R), green (G), and blue (B) pixels arranged in a matrix pattern;

a gate driving unit to apply scan signals to the plurality of gate lines;

a lookup table to store a gray scale value corresponding to a predetermined gray scale level of a B color, wherein the predetermined gray scale level is a gray scale level immediately prior to a reference gray scale level to begin reducing a color reproducibility, and the stored gray scale value is the maximum gray scale value corresponding to the maximum gray scale level displayable by the LCD panel for which the color reproducibility of the B color is not reduced,

wherein the lookup table stores gray scale values of blue, red, and green colors, and the lookup table stores gray scale values each corresponding to one of 64 gray scale levels of the blue color;

a data processing unit that analyzes a gray scale level of the B color in received image information, replaces a gray scale value of the gray scale level of the B color in received image information with the stored gray scale value corresponding to the predetermined gray scale level of the B color retrieved from the lookup table in response to a determination that the gray scale level of the B color in the received image information is greater than the reference gray scale level, and outputs a image information including a compensated gray scale value of the gray scale level of the B color; and

a data driving unit to receive the image information including the compensated gray scale value of the B color and to apply the compensated image information to the data line.

25. (New) The device of claim 24, wherein the maximum gray scale value corresponds to a 51st gray scale level of the blue color.

26. (New) The device of claim 25, wherein stored gray scale values corresponding to a 52nd gray scale level to a 64th gray scale level are identical to a gray scale value corresponding to the 51st gray scale level.

27. (New) The device of claim 26, wherein gray scale values of the 52nd gray scale level to the 64th gray scale level are storable in the lookup table upon mixing gray scale values of at least two of R, G, and B colors.

28. (New) A method for improving a color reproducibility of a liquid crystal display (LCD) device, comprising:

- increasing a gray scale value of a B color of LCD device;
- detecting a reference gray scale level of B color at which a color reproducibility of the LCD device begin to reduce, during the increasing of the gray scale value of the B color;
- storing a gray scale value corresponding to a predetermined gray scale level of the B color in a lookup table, wherein the predetermined gray scale level is a gray scale level immediately prior to the detected gray scale level, and the stored gray scale value is the maximum gray scale value corresponding to the maximum gray scale level displayable by the LCD device for which the color reproducibility of the B color is not reduced;
- compensating a input video data by analyzing a gray scale level of the B color in the input video data, replacing a gray scale value of the gray scale level of the B color in the input video data with the stored gray scale value corresponding to the predetermined gray scale level of the B color retrieved from the lookup table in response to a determination that the gray scale level of the B color in the input video data is greater than the reference gray scale level, and outputting a input video data including a compensated gray scale value of the gray scale level of the B color; and
- applying the image information including the compensated gray scale value of the B color to data lines of the LCD device.

29. (New) The method of claim 28, wherein the maximum gray scale value corresponds to a 51st gray scale level of the blue color.

30. (New) The method of claim 28, wherein the gray scale value at which the color reproducibility is reduced corresponds to a 52nd one of 64 gray scale levels of blue color displayable by the LCD device.